UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

A. SCHULMAN, INC.,	)	
	)	
Plaintiff and Counter-Defendant,	)	Case No. 1:15 CV 1760
	)	
v.	)	Judge Patricia A. Gaughan
	)	
POLYONE CORPORATION and POLYONE DESIGNED STRUCTURES AND SOLUTIONS LLC	)	
	)	
Defendants and Counter-Plaintiffs.	)	
	)	

OPENING CLAIM CONSTRUCTION BRIEF BY DEFENDANTS POLYONE CORPORATION AND POLYONE DESIGNED STRUCTURES AND SOLUTIONS LLC

TABLE OF CONTENTS

TABLE OF AUTORITIES

Cases

Statutes

I. Introduction

The claims in U.S. Patent Nos. 8,007,902 and 8,182,906 ("the Asserted Patents") are moving targets that refer to two separate tests that change depending on the measurement techniques that are used. This conflicts with the basic idea that a patent has a public notice function that needs to make clear to the world what is, and what is not, an infringement. With the Asserted Patents, however, if you test one way, you get one result; if you test another, you get a different result. Because the Asserted Patents fail to instruct how to do the tests, this lack of certainty about the claims' scope renders them invalid.

What is particularly troubling is that Plaintiff uses a reverse engineered claim construction that it created **after** it conducted its infringement testing. It ran tests on the Accused Products and got two sets of results. It then picked a construction from the set of results that favored infringement while rejecting the results that did not. This is the antithesis of the patent public notice function that informs the public such that competitors can avoid infringement.

The parties agree that five claim limitations are at issue. Two of them – (1) the DOI and (2) the Gravelometer limitations – require testing but the patents provide no guidance on how to conduct the testing and interpret the results. A third limitation – (3) the Random Microstructure limitation – is invalid because the patents provide no explanation about what this claim term means. Tellingly, the United States Patent Examiner is struggling with these same issues and has rejected similar claims from related continuing applications with the same specification and tests. *See, e.g.* Michalek Decl., Ex. 1-2.

The parties also dispute the meaning of the (4) Colored Polyolefin Layer and (5) Clear Polyolefin Layer. PolyOne's proposed construction boils down logically to the fact that the color layer has pigment and the clear layer does not. If it did, it would become a colored layer.

II. Background

A. Patents-In-Suit

Plaintiff, A. Schulman, Inc. ("ASI"), asserts that Defendant PolyOne Corporation and PolyOne Designed Structures and Solutions, LLC (collectively "PolyOne") have infringed claims 1 and 36 of U.S. Patent No. 8,007,902 ("the '902 patent") (Doc. 54, ¶14) and claims 1, 20, 39, 55, 77 of U.S. Patent No. 8,182,906 ("the '906 patent").[1] *Id*. The '906 patent is a continuation of the '902 patent and both share the same specification.

B. The Accused Products

"While a trial court should certainly not prejudge the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process, knowledge of that product or process provides meaningful context for the first step of the infringement analysis, claim construction." *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326-27 (Fed. Cir. 2006). PolyOne's accused products are thermoplastic polyolefin structures ("TPO")—the Extreme HG TPO and the Formalloy HG TPO, which can be called by one important word: "Plastics."[2]

PolyOne sold the accused products, Formalloy HG and Extreme HG, for more than a year before the earliest filing date of the Asserted Patents rendering them invalid under *Vanmoor v. Wal-Mart Stores, Inc.*, 201 F.3d 1363 (Fed. Cir. 2000). The Formalloy HG brand of TPO, suitable for use in many vehicle exterior and interior thermoformed parts, was introduced in 1998 and consists of a glossy polyolefin cap layer over a thermoplastic polyolefin base. The

[1] PolyOne and ASI are using a Joint Appendix ("JA") comprised of exhibits JX 1 through JX 9 and Bates numbered JA00001 through JA013885. The JA includes the Asserted Patents and relevant related applications and file histories. PolyOne also submits separate Exhibits supporting its claim construction position that are attached to the Declaration of Brian R. Michalek that is filed simultaneously herewith ("Michalek Decl.").

[2] *The Graduate* (1967), Calder Willingham, *et al*. (DVD).

Extreme HG TPO was first commercialized in 2006 and also consists of a glossy polyolefin cap layer over a thermoplastic polyolefin base. In contrast, however, Plaintiff ASI does not manufacture a TPO product covered by the claims of the Asserted Patents.[3]

III. The Law on Claim Construction

Claims are construed as a matter of law with the purpose of "determining the meaning and scope of the patent claims asserted to be infringed." *Markman v. Westview, Instrs., Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*), *affd*, 517 U.S. 370 (1996). A claim construction analysis "must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[ ] out and distinctly claim[ ] the subject matter which the patentee regards as his invention.'" *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001), citing 35 U.S.C. §112, ¶2. Indeed, the words of the claims themselves define the scope of the patented invention. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

In construing the claims, it is the intrinsic evidence—the claims, the specification, and the prosecution history of the patents—that is "the most significant source of the legally operative meaning of disputed claim language." *Vitronics*, 90 F.3d at 1582. In fact, the specification is "the single best guide" to the meaning of a claim term. *Vitronics*, 90 F.3d at 1582. While the Court may turn to extrinsic evidence, that is, any evidence "external to the patent and the prosecution history, including expert and inventor testimony, dictionaries, and learned treatises," such evidence is "less significant that the intrinsic record." *Phillips v. AWH Corporation*, 415 F.3d 1303, 1317-18 (Fed. Cir. 2005) (internal citation omitted).

"35 U.S.C. § 112, ¶ 2 requires that the specification of a patent conclude with one or

[3] At one point prior to this lawsuit, ASI claims to have manufactured an "Invision" TPO product covered by claims of the Asserted Patents. It no longer does so. Michalek Decl., Ex. 14, p. 8, ¶25.

more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. Because claims delineate the patentee's right to exclude, the patent statute requires that the scope of the claims be sufficiently definite to inform the public of the bounds of the protected invention, i.e., what subject matter is covered by the exclusive rights of the patent. Otherwise, competitors cannot avoid infringement, defeating the public notice function of patent claims." *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008) (internal quotations and citations omitted).

Courts may not redraft claims, whether to make them operable or to sustain their validity. *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004). If the claim term or its construction is ambiguous such that a person of ordinary skill in the art cannot ascertain its scope to a "reasonable degree of certainty" then the claim is invalid. *Nautilus Inc. v. Biosig Instruments, Inc.*, 134 S.Ct. 2120, 2129 (2014). The court "cannot alter what the patentee has chosen to claim as his invention…No matter how great the temptations of fairness or policy making, courts do not rework claims. They only interpret them." *Intervet America, Inc. v. Kee-Vet Laboratories, Inc.*, 887 F.2d 1050, 1053 (Fed. Cir. 1989) (internal citations omitted).

POLYONE'S CLAIM CONSTRUCTION ANALYSIS

IV. The Gravelometer Claim Limitation is Invalid for Being Indefinite, or Alternatively PolyOne's Proposed Claim Construction Should Be Adopted

Claim Limitation	
Gravelometer Limitation	"[the structure] passes a gravelometer impact test per the GM9508P standard, with a 10 pt [pint] load, at a −30° C. temperature, and at an angle of 30 degrees."

Patent Claims	PolyOne's Construction	ASI's Construction
All asserted claims of '902 and '906 patents	Indefinite under 35 U.S.C. §112, ¶2	"has a score of 7 or greater per the scoring system of the GM9508P standard with no cracking or delamination."

A gravelometer is a machine used to subject test samples such as automotive bumpers and quarter panels to damage caused from the impact of gravel. The test samples are mounted to the back of the gravelometer machine and gravel is projected at the sample by an air blast. A technician will then visually evaluate the damage of the tested sample and subjectively assign a rating score of zero to ten for the tested sample.

"Whether a claim reasonably apprises those skilled in the art of its scope is a question of law…." *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1374 (Fed. Cir. 2008). And "[a] determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims." *Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 705 (Fed. Cir. 1998).

The Gravelometer limitation is indefinite for failing to provide a claim scope with a "reasonable certainty." *See Nautilus Inc.*, 134 S.Ct. at 2124 (2014); 35 U.S.C. §112, ¶2 ("The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."). This uncertainty results from the claim limitation requiring passing a test, but not providing any test evaluation criteria. Without any guidance, intrinsic or otherwise, the Gravelometer claim scope changes based on the subjective evaluation criteria the tester decides to use.

In the alternative, to the extent the Court can construe the Gravelometer limitation, PolyOne requests the Court adopt PolyOne's substitute construction that includes *all damage* for evaluation purposes; not just only certain types of damage.

A. The GM9508P Gravelometer Claim Limitation is Indefinite Under 35 U.S.C. §112, ¶2

1. The Asserted Patents and the GM9508P Standard Do Not Disclose Any Damage Criteria For Evaluating Plastic TPO Products

The Gravelometer limitation is indefinite because there is no certainty about what type of damage to use for evaluation. The claimed GM9508P standard was designed to measure chipping of ***painted coatings on metal***.[4] Michalek Decl., Ex. 4, p. 1. The Asserted Patents are directed to ***plastics***. JX 1, JA000007, Col. 3, ll. 32-34.[5] The disconnect between "coatings" and "plastics" causes this claim uncertainty because a gravelometer test affects these particular surfaces differently. When applied to *coatings*, the gravelometer causes the paint coating to *chip* and fall off the metal. When applied to *plastics*, however, it causes other types of damage such as *scuffing and marring*. This was explained by Douglas Leggat of Ghesquiere Plastics Testing, Inc. ("GPT") whom ASI engaged to conduct its gravelometer tests: "You know, a paint will chip. You have clear chip, and you can see the substrate or the primer. Plastics tend more to mar or just get displaced. They don't chip like a paint would. So by necessity, you have to evaluate them differently." Michalek Decl., Ex. 3, GPT Tr. 19:4-10.

The bald application of the GM9508P standard to TPO plastic products generates the question—what damage criteria should be used for TPOs? The GM9508P *chipping* standard was not designed to evaluate TPO plastic parts with molded-in-color since accordingly to Mr. Leggat, TPOs "don't chip like a paint would." Michalek Decl., Ex. 3, GPT Tr. 19:7-8. Accordingly, evaluating TPOs for *chipping* would essentially be a non-test—nothing would chip.

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[4] Other different gravelometer standards also exist such as the ASTM D3170 or SAE J400 standards.

[5] The Asserted Patents U.S. 8,007,902 and U.S. 8,182,906 and pending Application Nos. 14/841,011 and 15/005,119 all share the same specification. For consistency, PolyOne cites to the specification of U.S. 8,007,902 which is JX 1 in the Joint Appendix (JA000001-20).

General Motors explicitly recognized that its GM9508P standard should not be applied to TPOs. When the GM9508P standard was superseded by the GMW14700 standard, General Motors specifically explained that:

> "If this standard is used on uncoated panels (e.g., molded-in-color (MIC) plastic), alternate evaluation and rating procedures will be required." Michalek Decl., Ex. 9, p. 1, ¶1.1.

ASI's own produced documents from General Motors confirm the inapplicability of the gravelometer test to TPOs:

> "Not all panels have a stone chip rating as some do not have a coating to chip (ie. MIC)." Michalek Decl., Ex. 5, A003378.
> …
> "Mold in Color: There was no good method for determining the number of chips, since the color goes throughout the substrate. *Id.*, A003377.
> …
> "For MIC applications all materials will scuff and damage." *Id.*, A003378.

The Asserted Patents, however, are silent about which evaluation criteria should be used for TPO materials. And the GM9508P standard itself explains that when testing non-coatings, a separate set of evaluation criteria must be specifically defined:

> "When test panels are used to evaluate a ***new substrate material*** or coating system, the panel preparation shall be defined by the engineer requesting the evaluation." Michalek Decl., Ex. 4, p. 2, ¶5.2.2 (emphasis added).

ASI's own expert, Dr. Baghdachi, also agrees that different evaluation criteria must be selected when testing new substrate materials such as TPOs. Michalek Decl., Ex. 10, p. 2, ¶5. Similarly, ASI's testing laboratory, GPT, agrees that the customer must define the evaluation criteria for TPO products when applying the GM9508P standard:

> Q. So how do you determine which you include, marring or tearing or whatever?
> A. By consultation with the customer. Michalek Decl., Ex. 3, GPT Tr. 19:17-18.

Because of this, the gravelometer claim scope is based on the *selection of the user*; not the teachings of the patent.

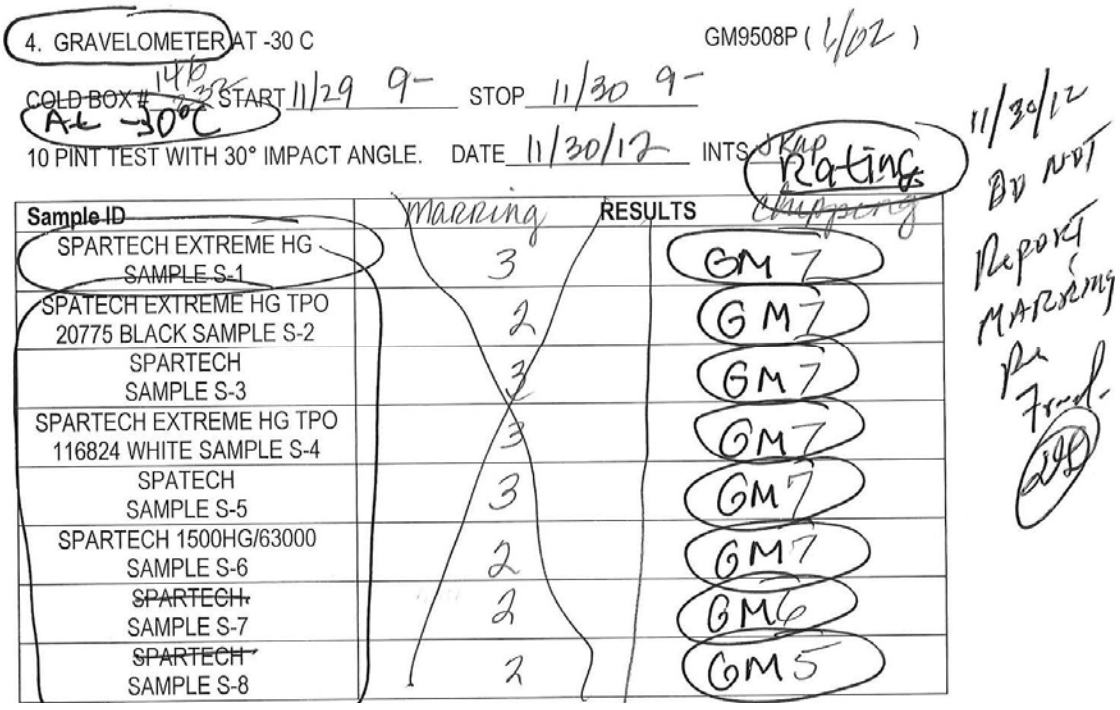
This claim uncertainty is heightened by there being no instruction in the industry. ASI's testing laboratory, GPT, explained that even after searching, it found no guidance as to how to conduct the gravelometer test on TPOs:

> Q. So it's up to the customer to decide?
> A. In this instance, it has to be because you're deviating, really, from the intent of the test [GM9508P] method.
> Q. Is there any written guidance that you're aware of as to –
> A. No. And I've looked.
> Q. I'm sorry. You said no?
> A. No, right. There was no written guidance.
> …
> Q. You've looked thoroughly?
> A. We have, yes. Michalek Decl., Ex. 3, GPT Tr. 19:19-20:11.

Because there is no industry guidance to lean on, customer guidance can differ to fit the circumstances. Menna Decl.,[6] Ex. A, p. 8, ¶12o. For example, in the automotive industry, different vehicle locations can have different rating requirements depending upon their defined "appearance zone." *Id.* If a vehicle surface is highly visible to the end user, such as the front grill and side panels of a vehicle, then it may have higher rating requirements that include *all damage*. If the surface is in a low visibility location, then it may have lower rating requirements that counts only *limited damage*. It is really up to the customer to decide. *Id.*

GPT's gravelometer testing typifies this uncertainty. ASI engaged GPT to test the allegedly infringing products. Michalek Decl., Ex. 11, GPT000094. When GPT did so, it first counted "marring" as part of the GM9508P evaluation criteria, and it scored the accused products with failing "2s" and "3s" when ASI and the claims required a 7 to pass. Michalek Decl., Ex. 12, p. 5. When ASI learned of the failed scores, it rewrote the scoring criteria to *exclude marring* and to only consider *chipping* to raise the scores as shown in Ex. 11, GPT000113 below:

[6] The Declaration of expert Dr. Todd Menna ("Menna Decl.") filed simultaneously herewith includes as Exhibit A Dr. Menna's L.P.R. 4.3(a) Expert Declaration in Support of PolyOne's Proposed Claim Construction.



4. GRAVELOMETER AT -30 C GM9508P (1/02)

COLD BOX # 14B START 11/29 9- STOP 11/30 9-

AL -30°C

10 PINT TEST WITH 30° IMPACT ANGLE. DATE 11/30/12 INTS

Rating

11/30/12 DO NOT Report MARRING Per Fred

Sample ID	marring	RESULTS
SPARTECH EXTREME HG SAMPLE S-1	3	GM7
SPATECH EXTREME HG TPO 20775 BLACK SAMPLE S-2	2	GM7
SPARTECH SAMPLE S-3	3	GM7
SPARTECH EXTREME HG TPO 116824 WHITE SAMPLE S-4	3	GM7
SPATECH SAMPLE S-5	3	GM7
SPARTECH 1500HG/63000 SAMPLE S-6	2	GM7
SPARTECH SAMPLE S-7	2	GM6
SPARTECH SAMPLE S-8	2	GM5

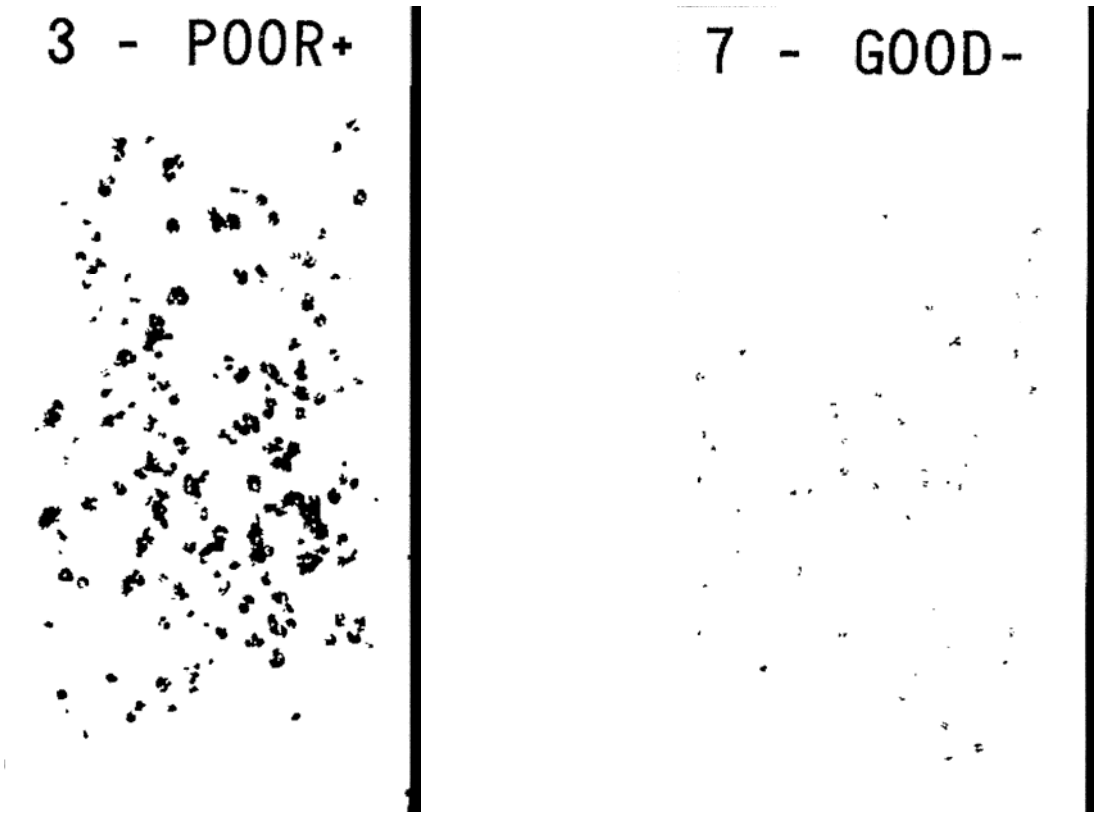
After finding out that "marring" resulted in scores of 2s and 3s, Douglas Leggat of GPT (the "DL" initials in Ex. 11 above) was told "per Fred [Galle]" (also identified above), ASI's Business Manager of Polytrope STR Products, to ignore marring as well as other surface damage:

> A. We were told, and it's written in some of your notes there, my handwriting, that we were to ignore marring in the evaluation." Michalek Decl., Ex. 3, GPT Tr. 20:23-25.
> …
> Q… Now, what was the criteria that was used to determine whether something was a GM7 or otherwise?
> A. The same as previously, whether it's cut, broken, or what have you, those things, mars were ignored.
> Q. Dents were ignored?
> A. Again, dents were ignored. Same as the previous time. *Id.*, 57:9-17.
> …
> A. … So after consultation with them [ASI], they decided do not report the marring. *Id.*, 33:21-25.

In short, ASI reverse engineered its claim construction to only include damage criteria to get a result to support its infringement theory.[7] As a result of this selectivity, the scores of the exact

[7] ASI admits that scores of GM2s and GM3s would not pass the Gravelometer limitation. Michalek Decl., Ex. 12, p. 5.

same products were raised from 2s and 3s to GM7s. Michalek Decl., Ex. 11, GPT000113. This selectivity is not insubstantial as shown by the dramatic differences in the GM9508P official visual scoring criteria for a "GM3" (left) and a "GM7" (right) that are produced below:



* The size for the GM9508P scoring criteria above has been reduced to fit this page. A full-size version, of the GM9508P scoring criteria is produced in Michalek Decl., Ex. 4

Accordingly, the scoring for the GM9508P test is hitched to the whim of the customer's defined metrics; not the patents' teaching. As Mr. Leggat testified: "…You have to somehow decide, all right, I'm going to include all marring as a chip, you know, as a, quote, chip, or it's only going to be when there's, in fact, a tear in the substrate or whatever. You have to come to sort of agreement with your customer about how you're going to evaluate things." Michalek Decl., Ex. 3, GPT Tr. 19:10-16. Given this evaluation uncertainty, the Gravelometer limitation is indefinite and renders the claims invalid.

2. The Gravelometer Limitation is Indefinite as the Asserted Patents Modify the GM9508P Standard But Provide No Guidance on How To Make the Modification

GM9508P sets forth a detailed protocol for using 1 pint of gravel in the gravelometer. Michalek Decl., Ex. 4, p. 2, ¶5.3.3, ¶5.3.6. The protocol provides specific requirements for maintaining pressure and temperature within the gravelometer system. *Id.*, ¶5.3.1, ¶5.3.2. Pursuant to GM9508P, the gravelometer air pressure must remain set at 70 psi. *Id.*, ¶5.3.2. And the test samples must be conditioned at -30º C for 4 hours prior to testing. *Id.*, ¶5.3.1. Deviation from these requirements can affect test consistency and results. Menna Decl., Ex. A, p. 7, ¶12m.

The asserted claims modify this protocol. Instead of 1 pint, the claims require 10 pints of gravel. *See, e.g.* JX 1, JA000019, Col. 27, ll. 37-39. This modification creates uncertainty about how to conduct the test while maintaining the strict system pressure and temperature requirements. As admitted by ASI, the patents give no explanation on how to run the modified GM9508P test. Michalek Decl., Ex. 17, Doc. 57, ¶¶110, 134 ("ASI admits that the [patent] specification does not describe in ipsis verbis how to use a 10 pt load in GM9508P….").

Without any intrinsic guidance, the test operator is left to guess on how to run the modified test. Should the technician feed all 10 pints at once, or wait and feed 1 pint separately 10 times? This discretion can result in deviation from the pressure and temperature parameters required by the standard and thereby affect testing results. Menna Decl., Ex. A, p. 7, ¶12m. For example, the gravelometer uses air pressure to project gravel at the test sample. Under the *original* protocol, the 1 pint of gravel is projected at 70 psi. Michalek Decl., Ex. 4, ¶5.3.2. With the *modification*, however, the pressure will decrease if the operator feeds all 10 pints of gravel at once. As Mr. Leggat explained: "A. … [Y]ou have to be between 70 plus or minus 2 psi coming out of your compressor, and it's easy to drop below that. So you really can't do -- if you tie two compressors together, you might be able to do two at a time, but it's unlikely." Michalek

Decl., Ex. 3, GPT Tr. 82:7-12. This reduced pressure will decrease the speed of the gravel and result in less damage and inconsistent test results. Menna Decl., Ex. A, p. 7, ¶12m.

Alternatively, the technician may decide to feed only 1 pint of gravel into the machine at a time. While this will permit repressurization, this method also prolongs the test causing the sample temperature to increase. The GM9508P standard specifically notes that "[a]ctual sample temperature will increase during the test because of warm air flow." Michalek Decl., Ex. 4, ¶5.3.1. Accordingly, by projecting 1 pint of gravel, then waiting for the pressure to return to normal, and projecting the next 1 pint of gravel, the sample temperature will increase thereby affecting testing results. Menna Decl., Ex. A, p. 7, ¶12m.

Accordingly, the claim's unexplained, modified GM9508 protocol renders the claim indefinite by forcing the operator make a guess about how the gravel will be administered.

B. To the Extent the Gravelometer Limitation Can Be Construed, PolyOne's Substitute Construction Should Be Adopted

1. The Substitute Gravelometer Limitation Construction Should Include All Damage As Evaluation Criteria

To the extent this limitation can be construed, it must include *all damage* for evaluation purposes including any "chipping, denting, cratering, cracking, marring, or other surface damage of any kind imparted by the gravel to the surface." Michalek Decl., Ex. 13, pp. 2 and 8.

ASI only wants to count some damage—chipping, cracking and delamination[8]—while ignoring others. Michalek Decl., Ex. 12, p. 5. This *ex post facto* cherry picking, however, sidesteps the Asserted Patents that specify a GM9508P damage evaluation scale from "fail" to "no damage / no chipping" criteria (*See* JX 1, JA000017, Table 2, footnote; reproduced below):

[8] ASI's proposed construction includes passing the GM9508P with a limited *chipping* scoring system and having "no cracking or delamination." Michalek Decl., Ex. 12, p. 5. ASI's construction includes the terms "no cracking or delamination" which appear nowhere in the GM9508P standard. Thus, even ASI seeks to rewrite the GM9508P protocol beyond the standard.

GM9508P Scale: 0 = Fail ..... 10 = no damage/no chipping

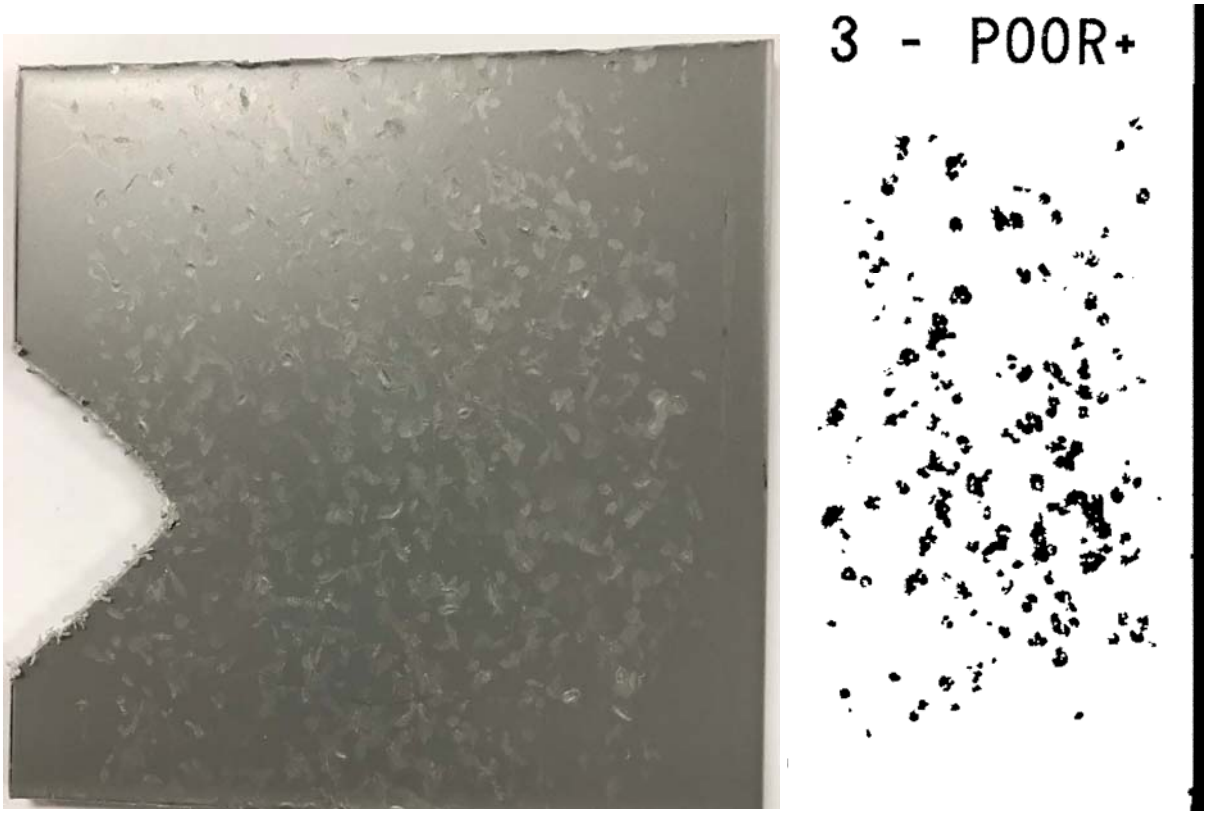
This scale indicates that while "chipping" is part of the analysis, other "damage"—including denting, cratering, cracking, marring, or other surface damage must be considered as well for evaluation purposes for a score of 10 to mean "no damage." JX 1, JA000017, Table 2, footnote.

The Asserted Patents also explain that the claimed "structures display a 'class A' finish' and meet a variety of requirements for durability and weatherability." JX 1, JA000001, Abstract. Including *all damage*, not just some, is consistent with determining whether there is a Class A finish and abiding by commercial appearance standards. Indeed, a car panel with no chips, but riddled with scuffs, mars, and dents would fall far short of a "Class A finish." No one would want to buy a car that has scuffs, mars, and dents.

ASI's own documents confirm counting *all damage*. During discovery, ASI produced a document entitled "Stone Impingement Study for Exterior Automotive Application." Michalek Decl., Ex. 5, A003377-79. This study was presented by General Motors to ASI and explains that *all damage* should be considered for TPO evaluation purposes:

> "Mold in Color: There was no good method for determining the number of chips, since the color goes throughout the substrate. These samples were *evaluated for overall appearance (ie. scuff damage*." Michalek Decl., Ex. 5, A003377 (emphasis added).
> …
>
> "Not all panels have a stone chip rating as some do not have a coating to chip (ie. MIC)… The same scales were used, but each scuff was considered to be a chip." *Id.*, A003378.

ASI's testing of PolyOne's sample products in this litigation demonstrates the real world unworkability of ASI's pick-and-choose approach. Michalek Decl., Exhibit 7 (reproduced below on the left) is a photograph of a PolyOne TPO sample that ASI subjected to gravelometer testing next to the GM9508P example of a GM3 "Poor."



As illustrated,[9] the gravelometer test caused significant scuffing, marring, and other surface damage consistent, at least, with a failing GM3 score. Using its selectively limited construction, however, ASI ignored the majority of the damage and counted only what it called "chips." *Supra*, Michalek Decl., Ex. 3, Tr. 20:23-25 and 57:9-17. This selectivity resulted in a passing score to a product sample that clearly is not commercially presentable. You would not buy a car that has the damage shown in Exhibit 7 above.

Accordingly, to the extent the Gravelometer limitation can be construed, *all damage* must be considered for evaluation purposes. This is captured in PolyOne's proposed substitute construction that "passes a gravelometer impact test" should mean "obtaining a rating of 7 or greater as determined by a visual comparison of the surface of a panel subjected to the test with the photographic standards (Figures 1 through 8) of the GM9508P standard, where the *visual*

[9] The parties have requested claim construction oral argument, and PolyOne would like to present the test samples so the Court can make a direct comparison.

comparison accounts for any chipping, denting, cratering, cracking, marring, or other surface damage of any kind imparted by the gravel to the surface." Michalek Decl., Ex. 13, p. 2, p. 8.

2. The Remaining Claim Portions for the Modified GM9508P Test Should Be Construed so as to Maintain Testing Temperature and Pressure Requirements

The modification of the GM9508P test to include 10 pints of gravel instead of 1 pint renders the claim indefinite. To the extent the Gravelometer limitation can be construed, it should be done with instructions to maintain uniformity and consistency of the GM9508P pressure and temperature requirements. Without such instructions for the modified test, both PolyOne's and ASI's experts will not have a consistent protocol for testing the Accused Products.

Accordingly, the term "10 pt [pint] load" should be construed such that the 10 pint load is administered to the gravelometer test in a manner that minimizes the changes to pressure and temperature. To do this, the 10 pints should be administered 1 pint at a time within 10 seconds of removing the sample test panel from the conditioning freezer. This will reduce the time for the test sample is exposed to the environment and help maintain the test sample at the required −30º C. Michalek Decl., Ex. 4, ¶5.3.1. Additionally, the air pressure of the gravelometer machine should be readjusted to 70 psi for each pint of gravel. *Id.*, ¶5.3.2. These constructions will maintain uniform testing approach and are consistent with the requirements of GM9508P.

Similarly, the "at a −30° C. temperature" term should be construed to maintain the sample at the −30° C. temperature. *Id.*, ¶5.3.1. Since the "[a]ctual sample temperature will increase during the test because of warm air flow" (*id.*), the sample should be conditioned or reconditioned at -30 C for a minimum of 4 hours before feeding each pint of gravel. *Id.*

V. The DOI Limitation is Indefinite Because Its Meaning Changes Based on the Testing Methodology and Devices That Are Used

Claim Limitation	
DOI Limitations	"[the structure] has a DOI of 70 or greater" "[the structure] a DOI of 85 or greater"

Patent Claims	PolyOne's Substitute Construction	ASI's Construction
All asserted claims of '902 and '906 patents	Indefinite under 35 U.S.C. §112, ¶2	"DOI" means "distinctiveness of image, a measure of how clearly an object is reflected by a surface." A POSA would understand, given the patent specification, that DOI is determined by measurement using any of the approved DOI measurement instruments listed in GM 4348M section 3.1.5.

The parties agree that DOI refers to "Distinctiveness of Image." This is a gloss appearance attribute and refers to the clarity of an image produced by reflection of an object onto a surface. Michalek Decl., Ex. 7, p. 1. If the reflection of an object on a surface appears sharp and clear, the surface has a high DOI. If the reflection is blurry with low contrast, it has a low DOI. An analogy would be whether the surface is a good or bad mirror.

Like the Gravelometer limitation, the DOI limitation raises questions about which test protocols to use. The claims require "a DOI of 70 or greater," but the patents are silent about how to test for it. Compounding matters, the industry recognizes multiple different methods and devices for measuring DOI with each method capable of obtaining different DOI results. *See, e.g.* Michalek Decl., Ex. 7-8; *See also* Gosselin Decl.,[10] Ex. B, pp. 2-4, ¶¶8-10.

Indefiniteness of DOI is also a legal question for the Court. The Federal Circuit has

[10] The Declaration of expert Dr. Cynthia Gosselin ("Gosselin Decl.") filed simultaneously herewith encloses as Exhibit A Dr. Gosselin's L.P.R. 4.3(a) Expert Declaration in Support of PolyOne's Proposed Claim Construction and as Exhibit B Dr. Gosselin's L.P.R. 4.3(b) Rebuttal Expert Declaration in Support of PolyOne's Proposed Claim Construction.

explained that a claim is indefinite when there are multiple measuring methods, but the patent does not state which to use. *Dow Chem. Co. v. Nova Chemicals Corp. (Canada)*, 803 F.3d 620, 634 (Fed. Cir. 2015), *cert. denied,* 136 S. Ct. 2452, 195 L. Ed. 2d 264 (2016) (Court finding claim term "a slope of strain hardening coefficient greater than or equal to 1.3" indefinite for failure to set forth method of measurement); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1342-46 (Fed. Cir. 2015) (Court finding claim indefinite because there was no intrinsic guidance as to which of three possible measurements to use to determine "molecular weight."); *see also Icon Health & Fitness, Inc. v. Polar Electro Oy*, 656 F. App'x 1008, 1014 (Fed. Cir. 2016).

Given this DOI ambiguity, the Asserted Patents do not inform the public as to which evaluation methods or devices should be used to test these claim limitations. Without this guidance, the claims scope fluctuates and is therefore indefinite under 35 U.S.C. §112, ¶2.

A. A DOI Value Can Vary Depending on Which Methodology and Devices Are Used for Calculation

In its pleadings, "ASI admits that there are multiple methods for measuring DOI…." Michalek Decl., Ex, 17, ¶¶99, 127. A claim, however, is indefinite when the patent does not explain which of the many different measurement methodologies to use:

> "whether the existence of multiple methods leading to different results without guidance in the patent or the prosecution history as to which method should be used renders the claims indefinite…." *Dow Chem. Co.*, 803 F.3d at 634.

Many DOI methodologies exist. The Patent Examiner has taken this position in a child patent application no. 15/005,119 that is pending from the Asserted Patents. In this outstanding Office Action, the Patent Examiner rejects the claims on these DOI indefiniteness grounds:

> "Claims 2-9, 11, 13-24, 30 and 32-39 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. Claims 2,

> 14, and 33 recite that the multilayer polymeric sheet or product has a " DOI of 70 or greater"… however given that DOI, like gloss, is a relative property based upon the method of measuring the DOI, the recitation of DOI without reciting the conditions under which the property is measured renders the claims indefinite."[11] Michalek Decl., Ex. 1, p. 11.

The Examiner's position is consistent with the industry. For example, the ASTM D 5767-95 is a DOI standard entitled "Standard Test Methods for Instrumental Measurement of Distinctness-of-Image Gloss of Coating Surfaces." It sets forth different DOI testing methodologies, but explains that "[t]he scale values obtained from the alternative methods cited do not agree." Michalek Decl., Ex. 7, p. 1. In other words, a "70" DOI value acquired by one method will not necessarily be a "70" value when using an alternative method. *See* Gosselin Decl., Ex. A, p. 4, ¶9; *See, e.g. Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, No. 03 C 7713, 2008 WL 4083145, at *8–9 (N.D. Ill. Aug. 27, 2008) ("The first calculation may result in a product that infringes on the patent, while the second may not. Which is correct? From the claims, specification and preferred embodiment we cannot say… The devil is in the details, and the details here expose the claim as indefinite.").

The ASTM D 5767-95 gives three examples of different DOI methods that each involves different apparatus, procedures, calculations, and can provide different results. Michalek Decl., Ex. 7, p. 1, ¶1.2. The Goniometric Method is a method of measuring DOI using a narrow aperture for a light source. Gosselin Decl., Ex. A, pp. 4-5, ¶¶10-13; Michalek Decl., Ex. 7, pp. 2-3, ¶¶7-13). The Optical Profilometer method involves measuring DOI by using an "Image Clarity Meter." Gosselin Decl., Ex. A, p. 5, ¶14; Michalek Decl., Ex. 7, p. 3, ¶14.1. The Visual Inspection Method involves a subjective user evaluation of a projected pattern onto a sample surface. Gosselin Decl., Ex. A, p.5, ¶15.

[11] As of the date of this paper, ASI has not responded to this outstanding office action.

As set forth explicitly in the ASTM D 5767-95 standard "[t]he scale values obtained from the alternative methods cited do not agree." Michalek Decl., Ex. 7, p. 1, ¶1.1. Or put more simply, different methods can lead to different results. Gosselin Decl., Ex. A, p. 4, ¶9.

The Federal Circuit decision in *Dow Chem. Co. v. Nova Chemicals Corp. (Canada)*, 803 F.3d 620 (Fed. Cir. 2015) squarely addresses this issue involving multiple measurement methods. In *Dow Chem*, the salient claim term was "a slope of strain hardening coefficient *greater than or equal to 1.3*." *Id.* at 631 (emphasis added). The problem in *Dow Chem*. was the same problem here— 1) that multiple methods existed to measure the claimed limitation, and 2) the patent claims, specification, and the prosecution history provided no guidance as to which method should be used. *Dow Chem. Co.*, 803 F.3d at 633-634.

Given this measurement uncertainty, *Dow* held that the claim was indefinite under the Supreme Court's *Nautilus* standard because "[t]here is no question that each of these four methods may produce different results, i.e., a different slope." *Id*. at 633. The same problem is at issue here—namely that multiple DOI measurement methods exist; and the Asserted Patents do not explain which to use. Accordingly, there is no guidance that informs a person of ordinary skill what the scope of "a DOI of 70 or greater" is to a reasonable degree of certainty.

B. ASI's Proposed Construction Is an Attempt to Backfill and Rewrite the DOI Limitations

1. The Asserted Patents Provide No Reference to the GM 4348M Standard or to Select It Over Several Other DOI Methodologies

ASI's proffered construction is another reverse engineering of what it wishes the patent said. The Asserted Patents make no mention of any DOI standard let alone the GM4348M standard. Accordingly, there is no reason a person of ordinary skill would pick the GM4348M standard out of a sea of several other DOI standards. In short, ASI attempts to improperly rewrite its claim after-the-fact. *See Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d

1379, 1383–84 (Fed. Cir. 2008) ("Courts cannot rewrite claim language."); *See K–2 Corp. v. Salomon S.A.,* 191 F.3d 1356, 1364 (Fed.Cir.1999) ("Courts do not rewrite claims; instead, we give effect to the terms chosen by the patentee."); *Tex. Instruments, Inc. v. U.S. Int'l Trade Comm'n,* 988 F.2d 1165, 1171 (Fed.Cir.1993) ("[C]ourts can neither broaden nor narrow claims to give the patentee something different than what he has set forth.") (internal quotes omitted).

Other governing DOI testing protocols including ASTM D 5767–95, ASTM E430-11, GM-9101P, GMW15777-2016 (superseding the GM 4348M) and GM Test Specification TM-204-M exist. These standards set forth the use of different approved inspection devices and testing protocols for measuring DOI on various auto body parts. Gosselin Decl., Ex. B, pp. 2-3, ¶8; *See, e.g.* Michalek Decl., Ex. 8.

There are several other different *automotive* standards such as from Chrysler, Ford Motor Company, Honda Motor Company, Mitsubishi, Nissan, Toyota and Mazda.[12] Gosselin Decl., Ex. B, p. 3, ¶10. Following the methodologies and protocols of these different automotive DOI standards can lead to different DOI results. Gosselin Decl., Ex. B, p. 4, ¶11. By way of example, Dr. Gosselin described how both the Ford Motor Company's DOI standard and Mazda's DOI standard differ in principle and results from the GM 4348M standard. Gosselin Decl., Ex. B, pp. 4-6, ¶¶12-16).

Given this assortment of DOI methods and standards leading to different calculations and determinations, the DOI limitation is indefinite.

2. Even If ASI's Construction Is Adopted, the GM4348M Standard Sets Forth Conflicting DOI Measurement Instruments and Methods

Even if the GM 4348M was selected, it still sets forth use of four (4) different DOI instruments that operate on different scientific principles:

[12] The Asserted Patents do not just reference General Motors standards, but also reference Honda and Chrysler standards as well. JX 1, JA000016-17, Table 2.

> 3.1.5 The following inspection devices are approved for use in measuring the following appearance attributes: DOI: ATI Industries-Model 1864 from ADC at (313)-589-1580, BYK-Gardner-Model GB 4816 at 9104 Guilford Road/Columbia, MD 21046/Phone 800-343-7721, Hunter Dor-1-Gon, or glowbox. Michalek Decl., Ex. 15, ¶3.1.5.

The ATI Industries-Model 1864 is an *electro-optical device* that projects a controlled beam of light through an opening onto a test specimen. Gosselin Decl., Ex. B, p. 7, ¶20. In contrast, the BYK Gardner Model GB 4816 is a type of *wave-scan device* that uses an optical profilometer method for calculating DOI by accounting for the testing surface structure and gloss. *Id.*, p. 8, ¶21. The Hunter DORIGON is an *electro-optical instrument* that projects a beam of light at a sample surface. *Id.*, pp. 8-9, ¶¶22. Finally, the Glowbox involves a technician visually making a subjective evaluation of the projected image. *Id.*, pp. 9-10, ¶¶23-24.

Each of these different GM 4348M instruments can provide different DOI results. Gosselin Decl., Ex. B, p. 10, ¶24. Given the differences of these instruments, even the use of the GM 4348M devices renders uncertainty to the DOI limitation. *Id.*

VI. The "Random Microstructure" Limitation Is Invalid As Being Indefinite

Patents: Claims	PolyOne's Construction	ASI's Construction
All asserted claims of '902 patent	Indefinite under 35 U.S.C. §112, ¶2	"a layer primarily composing one or more polyolefins that are not block copolymers, and in which the mer units (the portion of a polymer derived from a single reactant molecule) do not form blocks and, instead, are incorporated in an essentially non-repeating manner."

The "random microstructure" is recited in each of the asserted claims of the '902 patent and is also indefinite. While the Asserted Patents conclude that there is a "random microstructure," nothing in the specification explains what it is.

In pending child Application no. 15/005,119 to the Asserted Patents, the Patent Examiner has also rejected this exact term – "random microstructure"—on grounds of indefiniteness under 35 U.S.C. 112, ¶2:

> "Claim 19 recites the limitation 'wherein the thermoplastic polyolefin of the second polymeric layer has a random microstructure' however it is unclear as to what is meant by the term 'random microstructure' given that the specification does not clearly define what 'microstructure' is random nor what degree of order or randomness would meet the limitation for which the 'microstructure' is random." Michalek Decl., Ex. 1, p. 13, ¶14.

The Examiner correctly explains that the patents provide no explanation as to the degree of order or randomness that would meet the limitation for which the "microstructure" could be considered is "random." The polymer science adds confusion to this limitation as all polymers have some degree of randomness at a microscopic level (e.g., random distribution of polymer chain length, random distribution of monomer units within a chain of a copolymer, random distribution of block lengths in block copolymers, random coiling of polymer chains, random distribution of crystalline regions, random orientation of side chains as in an atactic polymer, etc.).

Accordingly, there is no teaching from the Asserted Patents that would help distinguish a polyolefin layer with a random microstructure from a polyolefin layer with a non-random microstructure. ASI's proposed construction is again another improper redrafting. *See Helmsderfer*, 527 F.3d at 1383–84 (Fed. Cir. 2008). Without any intrinsic support, ASI injects brand new phraseology that actually confuses the matter.

ASI's insert of "essentially non-repeating manner" add more questions than it answers. For example, it is unclear how much of a "non-repeating manner" is necessary to count as "essentially" in the construction. Other Courts have similarly struggled with construction of the term "essentially." *See Glaxo Grp. Ltd. v. Ranbaxy Pharm., Inc.*, 262 F.3d 1333, 1336 (Fed. Cir. 2001) (Court finding that "essentially" means "fundamentally"); *Plastpro, Inc. v. Therma-Tru*

Corp., 378 F. Supp. 2d 519, 531 (D.N.J. 2005) ("essentially devoid" meaning "as near as possible to a complete absence…");

ASI's construction of "a layer *primarily* composing one or more polyolefins that are not block copolymers" is similarly flawed. Again, there is no guidance as to "primarily" and how much of the layer can be composed on polyolefins that are not block copolymers and those that are. *See Durel Corp. v. Osram Sylvania Inc.*, 256 F.3d 1298, 1304 (Fed. Cir. 2001) ("The district court's principal error in its claim construction was in using calculations of atomic mass percent to interpret the 'primarily' language.").

The patents give no guidance as to the meaning of random microstructure. ASI attempts to salvage this limitation through a rewrite but ends up adding confusion rather than clarity.

VII. Disputed Claim Terms: Colored Polyolefin Layer and Clear Polyolefin Layer

Each claim requires a "colored polyolefin layer" and a "clear polyolefin layer." Because both terms each appear in the same individual claims, "colored" and "clear" must mean different things and should be construed so as not to be superfluous. *See Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.").

A. PolyOne's and ASI's Proposed Construction for Colored Polyolefin Layer Appear to be the Same

Patents: Claims	PolyOne's Construction	ASI's Construction
All asserted claims	a polyolefin layer having any amount of pigment present	Plain and ordinary meaning

PolyOne's proposed construction for "colored polyolefin layer" is "a polyolefin layer having any amount of pigment present." Michalek Decl., Ex. 13, pp. 3 and 10. ASI's proposed construction is the "[p]lain and ordinary meaning." Michalek Decl., Ex. 12, p. 6. It is unclear how ASI's

plain and ordinary construction differs from PolyOne's construction that requires any amount of pigment. Both parties rely on the same portion of the patent specification – JX 1, JA000008, Col. 6, ll. 23-24, which state "[t]he color layer 5 contains pigment including opaque pigments, translucent pigments, and special effect pigments…"—as support for their construction. Similarly, a dictionary definition of "color" is "something that is used for coloring; pigment; paint; tint; dye" is also consistent with the parties' construction. Michalek Decl., Ex. 16.

Given this agreement, PolyOne requests that the Court adopt its construction for "colored polyolefin layer" as "a polyolefin layer having any amount of pigment present."

B. In View of the Construction for Colored Polyolefin Layer, the Clear Polyolefin Layer Construction Cannot Have Any Pigment Present

Patents: Claims	PolyOne's Construction	ASI's Construction
All asserted claims	a polyolefin layer having no pigment of any amount and having a light transmittance of 85% or greater and a haze of 10 or less	A POSA would understand that a "clear polyolefin layer has a light transmittance of 85% or greater, a haze of 10 or less."

PolyOne and ASI partially agree that the construction for "clear polyolefin layer" should include "having a light transmittance of 85% or greater and a haze of 10 or less." Michalek Decl., Ex. 13, pp. 3 and 9.

The clear polyolefin layer construction, however, must include something extra to make it different from "colored polyolefin layer." Accordingly, PolyOne proposes "a polyolefin layer having no pigment of any amount…." Otherwise, the construction risks becoming subsumed within the definition of "colored polyolefin layer." Put differently, without PolyOne's construction, if a clear layer has pigment, it becomes a colored layer. Construing claim terms superfluously is generally disfavored. *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1340 (Fed. Cir. 2016) (internal citations and quotations omitted) ("But allowing 'collection'

to mean 'receive' would render 'collection' entirely superfluous and allow any pressurized vessel to constitute a 'pressurized collection vessel'"); *See Merck & Co.*, 395 F.3d at 1372.

VIII. Conclusion

The claims of the Asserted Patents are based on tests. And the results of these tests fluctuate based on the test protocols that are used. The Asserted Patents, however, are silent as to which protocols to use. ASI wants to use this silence to circumvent the patent rules by running different test protocols, finding which ones favor its claim of infringement, and then handpicking one for its claim construction while rejecting the rest.

This is not how patents work. ASI's end-around flies in the face of the patent rules that require claims to be "precise enough to afford clear notice of what is claimed" and to eliminate the "zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement." *Nautilus*, 134 S.Ct. at 2129 (internal citations omitted).

ASI's specification and nebulous test claims provide no such "clear notice." *Id.* No person of ordinary skill in the art would be able to ascertain the scope of the claims with a reasonable degree of certainty. *Id*. For these reasons, the Asserted Patents are invalid.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

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